Design | Calculation | Manufacture

Complete One-stop Solutions
Karl Wrede Stahl- und Maschinenbau GmbH is a modern, second generation family-owned SME enterprise with 40 employees. For more than 50 years, the company has been based in Eddelak, a location within the Hamburg metropolitan area.

**Complete One-stop Solutions**

Our enterprise is proud to offer one-stop solutions under one roof – from our in-house design and calculation department to manufacture and delivery of the finished product. We put the highest emphasis on communicating quickly and directly with our clients, offering maximum flexibility while strictly adhering to the required standards of quality.

**Versatility is our strength**

Our large and modern machinery enables us to offer contract manufacturing of **welded assemblies up to a unit weight of 25 t**, with or without mechanical machining, ranging from sheet metal constructions to turned and milled parts as single item or small series manufacture.

From **laser-cut edge parts to precision-made individual components** or **mechanical machining of large components**: our clients value the wide range of manufacturing possibilities we offer. In the field of industrial services, we provide **just-in-time repairs** of mechanical engineering components and the **manufacture of spare parts**, as well as the **service and maintenance** of production plants.

Our dedicated and highly qualified team will ensure the optimum solution for your assignments, fulfilling your requirements in a dependable, timely, and professional manner.

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**RANGE OF SERVICES**

- Design and calculation
- Welded constructions up to 25 t
- Sheet metal work
- Mechanical manufacturing / machining of large parts
- Manufacture of assemblies
- Service and maintenance
- Just-in-time repairs

**Enterprise Data**

- Established in: 1961
- Form of Enterprise: GmbH
- Managing Director: Dipl.-Ing. (SFI) Jan Wrede
- Location: 25715 Eddelak
- Employees: 40
- Manufacturing area: 4,000 m²
Our quality management system has been certified by TÜV NORD CERT GmbH according to DIN EN ISO 9001:2015, which serves to increase our competitiveness, while simultaneously helping to build client trust regarding product quality and deadline reliability due to clear and proven work processes.

Welding is considered a “special process” according to DIN EN ISO 9001. In order to document adherence to this norm’s specifications for the “special welding process”, we meet the comprehensive requirements set out in DIN EN ISO 3834-2. Additionally, our in-house production control system is certified according to DIN EN 1090-2 EXC 3.

Our occupational health and safety management system complies with the norms and guidelines of, among others, OHSAS 18001 and SCC, to fulfill all demands of workplace health and safety. Successful certification in the areas of production and assembly allows us to showcase our expertise and secure our clients’ trust.

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<td>DIN EN ISO 9001:2015</td>
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Design and Calculation

Our in-house design department employs up-to-date methods and modern CAD- and calculation software to develop individual, custom-made solutions for our clients. The tight integration of design and manufacture enables us to come up with results that are both practical and production-ready.

We develop and manufacture, among others, various devices, operating and transport equipment, lifting devices, appliances and pressure vessels, as well as special-purpose constructions to clients’ specifications.

Our clients come from such diverse fields as chemical plant engineering, the food industry, or the wind energy sector; they all value our ability to cater comprehensively to their specific requirements, developing and delivering suitable tailor-made solutions on schedule.

The necessary proof calculations for manufactured parts are carried out in-house in accordance with the applicable rules and regulations. As required, we will ask a classification society or other suitable notified body to accompany the certification and parts approval. We supply technical documentation in accordance with machinery directive.

OUR AREAS OF FOCUS

- 3D-design (Autodesk INVENTOR)
- Structural frame and truss analysis (RSTAB)
- FEM-analysis (ANSYS Pro NLS)
- Verifiable calculation documentation
- Operating instructions
- Risk assessments
- Optional: external certification
Our 4,000 m² production floor is equipped with modern production facilities, allowing us to manufacture welded constructions up to a unit weight of 25 t, with or without mechanical machining.

Our manufacturing process is certified according to DIN EN 1090-2 EXE 3. Additionally, we meet the extensive quality requirements of DIN EN ISO 3834-2.

Our certified welders use state-of-the-art pulsed MIG/MAG welding technology and Siegmund precision welding table systems to manufacture technically challenging, high-quality welded constructions.

We process both conventional and high-strength construction steels, CrNi-steels, aluminium- and nickel-based alloys, based on welding procedure specifications (WPS) and procedure qualification records (WPQR). A continuously high level of product quality is achieved and maintained by our NDT specialists and our in-house production control (WPK), which has been certified by TÜV Nord Systems.
Preparation on 3D-welding table system

Turning device for machine housing

40' flat rack

280 t strut and lifting beams offshore wind turbine towers
This is another sector in which we can deliver **complete one-stop solutions** if and when required.

In close consultation with our clients, we develop complete solutions tailored to their specifications. We will also supply production-ready drawings, manufacture **single components or assemblies**, or deliver the **finished product**, ready for installation.

In the chemical industry sector, our clients prefer working with us when it comes to implementing ideas for **custom designs** from the areas of process engineering, apparatus engineering, and container manufacture – from the first rough draft to prototypes and, finally, the operation-ready machine.

Our successful manufacturing process is based both on our highly qualified team and an extensive, modern range of machinery. A laser cutting system, three CNC press brakes, and four plate bending roll machines only form part of our machinery, enabling us to manufacture a broad spectrum of components.
Laser cutting machine PRIMA POWER Zaphiro
CO2-laser with 4 kW, sheet thickness from 0.5 to 25 mm

CNC plate shear DURMA CNC VS 6013 - 13 mm x 6,000 mm

CNC press brake DURMA AD-S 60.600 - 600 t x 6,000 mm

CNC press brake ERMAK SPEED-BEND - 400 t x 3,000 mm

CNC press brake g.a.d.e. PRAECISA - 200 t x 3,000 mm

3-roll plate bending roll machine FACCIN HAV 3145
roll bending capacity: 3,050 mm x 45/35 mm (4xD/1.5xD)

CNC 4-roll plate bending roll machine IMCAR 4RH 8/5
roll bending capacity: 3,050 mm x 7, pre-bending capacity: 5 mm

4-roll plate bending roll machine AK-BEND AHS 2010
roll bending capacity: 2,100 mm x 13, pre-bending capacity: 10 mm

3-roll plate bending roll machine AK-BEND AS 90-10/8.0

Section bending machine AK-BEND APK 81

Automated sheet metal storage system KASTO UNITOWER C 1.2

Pivotal folding machine GÖTENEDS 2,500 mm

Plate shear WILA HS 255-4

Variable angle notcher BOSCHERT K30-120

Punching and nibbling machine TRUMPF TAS 64

CNC automatic bandsaw MEBAeco 410 DGA-2300

Circular saw EISELE VMS-I-S-PV and VMS-II-S-PV

Combination section cutter PEDDINGHAUS 210 Super 13

Hydraulic hole punch PEDDINGHAUS Hydraulic 500

Tube saw GF Orbitalum RA 41 Plus

GRIT belt sander, GRIT polishing machine, pipe notch machine

Injector blast cabinet NORMFINISH

Bead blast cabinet NORMFINISH

18 x pulsed MIG/MAG welding machines (Kemppi, EWM, Fronius)

13 x TIG welding machines (Kemppi, EWM)

11 x 3D welding table systems Siegmund System 28
Reference Components Sheet Metal Machining

Cyclone separators

Transition piece rectangular to round

Tower cover with 180 lifting beam

Container (Detail)
Receiver tank (CrNi-steel)

Cable retraction devices (Al-welded construction)
Manufacture of large components up to 25 t unit weight, single items, small or medium series, turned and milled parts, or deadline-critical just-in-time repairs – whatever our clients are looking for, they can trust in our high quality of execution, consistent precision, flexibility, and timely delivery.

In our mechanical manufacturing department, our experienced and highly qualified team employs modern CNC-controlled machine tools, as well as their conventional counterparts in case of repairs. CNC programs for complex operations are programmed using the 3D CAD model of a CAM system and then transmitted directly to the machine tool via DNC connection.

We offer our clients short-term manufacture of spare parts (based on patterns, drawings, or 3D models), as well as parts repair – in urgent cases even overnight! Maximum flexibility in the areas of service, repairs, and spare parts delivery forms part of our daily business.
CNC moving column milling machine ANAYAK HVM 12000
- t-construction and moving column in x- and y-axis
- fixed bench 13,000 x 3,000 mm, 10 t/m²
- travel x/y/z 11,300/2,000/2,400 mm
- max. component weight 25 t

Carousel lathe SCHIESS KZ 400-450
- surface plate diameter 4,000 mm
- max. swing diameter 4,500 mm
- allowable surface plate load 16 t
- max. component height 2,350 mm

Carousel lathe SCHIESS KZ 250
- surface plate diameter 2,500/2,700 mm
- max. swing diameter 1,400 mm
- allowable surface plate load 10 t

5-axis machining center DMG DMU 100 duoBLOCK
- travel x/y/z 1,000/1,000/1,000 mm
- max. table load 2,000 k

CNC bench drilling machine UNION KC 130/1
- with pallet changer
- travel x/y/z/w 3,200/2,500/1,500/800 mm
- max. table load 8,000 kg

CNC bench drilling machine UNION TC 110
- with pallet changer
- travel x/y/z/w 1,500/2,000/1,600/550 mm
- max. table load 4,000 kg

CNC turning center DOOSAN PUMA 700LM
- 45 kW, 5,419 Nm torque
- max. turning Ø 900 mm
- distance between centers 3,200 mm
- drives tools

CNC lathe SPINNER TC 800-110-MCY
- swing/turning Ø 800/500 mm
- distance between centers 900 mm
- drives tools, y-axis

CNC lathe SPINNER TC 800-85-SMCY
- swing/turning Ø 800/500 mm
- distance between centers 900 mm
- drives tools, y-axis, counter spindle

CNC lathe KREWEMA HFDM ZS 475 x 3000/FA
- max. swing Ø in the recess 1,600 mm
- max. turning Ø over bed 935 mm
- max. turning Ø over cross slide 620 mm
- base distance between centers 2,185 mm
- distance between centers w/extended bed 3,385 m

Heavy duty lathe RAVENSBURG P28
- swing Ø over Support 2,800 mm / in pit 5,500 mm
- distance between centers 7,000 mm
Reference Components Mechanical Manufacture

- Flange machining cooling drum
- Gabelköpfe Tragflächen-Teststand
- Centrifugal sieve drum
- Rotor shaft clamp
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